

CONSERVATION *Showcase*



Johnson Installs Hoop Barn with EQIP Assistance

After getting the scoop on hoop buildings at a southwest Iowa research farm, livestock producer Jacob Johnson installed one at his own operation, with assistance through the USDA's Environmental Quality Incentives Program (EQIP). The 50-foot by 240-foot hoop structure houses 300 head of feeder cattle and helps reduce manure and sediment runoff at his Corwith farm.

The 29-year-old Johnson and wife, Paige, moved back to his hometown in 2005 after graduating from Iowa State University in 2001 and working as a feedlot manager in the small northeast Iowa town of Lawler.



Jacob Johnson installed a hoop building to house 300 feeder cattle on his Corwith farm.



A ridge vent in the top middle of the tarp promotes good airflow. Bedding for the feeder cattle is corn stalks.

The idea for a hoop structure came after visiting the Armstrong Research and Demonstration Farm near Lewis. "I got as much information [about hoop structures] as I could before moving forward with the project," said Johnson. ISU is set to complete the cattle portion of a three-year study on hoop structures at their Lewis demonstration farm in 2008.

Benefits of Hoop Structures

Hoop structures reduce pollution issues for the gesta-

tion and finishing of swine, beef and dairy cattle, sheep and other livestock. The design of these structures provides a suitable environment for growth, and aids in animal handling, manure management, feeding and ventilation. The hoop system eliminates the need for sediment basins, or holding ponds, reducing odor and potential groundwater contamination.

According to Dr. Mark Honeyman, professor of animal science for ISU, hoop structures also allow livestock producers more control of environmental issues. "With hoop buildings, producers don't have to deal with issues that go along with mud, weather and manure runoff—things that are difficult or impossible to control," he said.

Livestock producers interested in a solid floor bedded-housing system or protection for cows from sun and rain without full environmental control might also consider building a hoop facility.

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Johnson also considered installing a mono-slope cattle barn. Monoslope barns are typically larger than hoop barns and feature a roof truss that is sloped to keep rainwater out of manure and feed. “The hoop building was the best alternative for me,” he said. “It’s a lower cost alternative and definitely environmentally friendly.”

When it came to deciding where to install the hoop structure, Johnson looked no further than his family. He purchased a small piece of land owned by his father and uncle that once operated as a grain elevator. A nearly perfect sized concrete slab was already in place.

EQIP Assistance

Next, Johnson visited Jason Moore, district conservationist with the USDA’s Natural Resources Conservation Service (NRCS) in Hancock County, to investigate financial assistance for his new building. NRCS was

able to offer Johnson financial assistance on a per animal unit basis through EQIP.

EQIP is a voluntary conservation program administered by NRCS that promotes agricultural production and environmental quality. EQIP offers ag producers financial and technical assistance to install or implement structural and management practices on eligible agricultural land. Examples of these practices include: grassed waterways, terraces, manure management structures, pasture management and tree plantings.



Johnson (right) received technical and financial assistance from the USDA-NRCS. District Conservationist Jason Moore (left) with NRCS assisted Johnson throughout the process.

The first year NRCS offered financial assistance to producers to install hoop structures was 2006, the same year Johnson signed his EQIP contract. Larry Beeler, NRCS assistant state conservationist for programs in Iowa, says hoop structures are a good alternative to open feedlots. “Hoop structures help reduce the size of open feedlots or eliminate the need for them in some cases,” he said. “They decrease the amount of manure runoff during rain events.”

Johnson’s hoop facility was complete in May 2007, and cattle were moved into the building on June 1. “For my first hoop building, I’m really happy with it,” he said. If he adds another hoop structure to his growing operation, Johnson would do a few things differently. “I would make the awning longer to prevent rain from getting in the feed bunks,” he said. “If we get any sort of wind with rain, it blows right into the bunk, creating a lot of moisture in there.”

He would also design the pens differently. The divider pens in Johnson’s hoop build-



A feed bunk was placed outside of the wall to eliminate the expanse of an interior drive alley. Approximately one foot of bunk per head is provided.

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ing are steel gates. He said he would pour cement walls to make it less labor intensive next time.

Manure Management

Johnson spends a few hours per week scraping along the bunks and sides, and adding replacement bedding. Once in the fall and spring he says he will clean the bedding and manure out, down to the cement. He applies manure to about 300 acres of cropland. That cropland is currently in a corn-on-corn rotation; Johnson utilizes the cornstalks for bedding.

To apply the appropriate amount of manure nutrients to his cropland, Johnson takes advantage of information provided through his Comprehensive Nutrient Management Plan (CNMP). A CNMP is a specific plan for an Animal Feeding Operation (AFO) that addresses the management and treatment necessary for the operator to protect soil and water resources, including manure and wastewater handling and storage, nutrient management,

land treatment practices, record keeping, feed management and other utilization activities. “The CNMP is a good management tool for all livestock producers,” said Johnson. “It has really helped me. Before we started testing the manure, we really didn’t know what we were applying, but now we have a better idea.”

Johnson would like to add another hoop building to his operation, but his plan is to wait and see how this one works out first. In the meantime, he is searching for another perfect location—just in case.

To learn more about CNMPs or EQIP, go to www.ia.nrcs.usda.gov or visit your local USDA-NRCS office.

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